

REMARKS/ARGUMENTS

Claims 1-15, 17-22, 24-26, 28-30 and 32-41 are pending in this application. By this Amendment, claims 1, 6, 10-12, 15, 19, 24-25 and 32-34 are amended, claims 23 and 31 are canceled without prejudice or disclaimer and claims 35-41 are newly added. Reconsideration in view of the above amendments or the following remarks is respectfully requested.

A. The Office Action rejects claims 1-15, 17-26 and 28-34 under 35 U.S.C. §103(a) over U.S. Patent No. 6,684,341 to Malcolm et al. (hereafter "Malcolm") and U.S. Patent No. 6,076,171 to Kawata. Since the references, individually or in combination, would not result in recited features, the rejection is respectfully traversed.

1a. With respect to claim 1, Applicants respectfully submit that Malcolm fails to disclose or suggest claimed features. For example, Malcolm fails to disclose at least features of a method for adjusting speed of a CPU including comparing the measured CPU usage with a predetermined reference CPU usage range and adjusting the speed of the CPU responsive to the comparison, wherein if the measured CPU usage is more than a maximum reference CPU usage of the predetermined reference CPU usage range, then the adjustment of the CPU speed is carried out by initializing the CPU speed for recovering a high performance state and combinations thereof as recited in claim 1.

In contrast, Applicants respectfully submit that Malcolm discloses a comparison as to the processor speed and the processor utilization whereby when the processor speed is less than the processor utilization, the processor speed is increased by one unit; and when the processor speed is greater than the processor utilization, the processor speed is slowed by one unit. See Figure 6, including steps 606 and 608 and column 7, lines 21-62 of Malcolm. As described with respect to Figure 6, Malcolm discloses using a processor

utilization ratio by selecting a one-to-one ratio and percentages of the processor speed and the processor utilization. However, even if a different processor utilization ratio such as a two-to-one ratio is selected, Applicants respectfully submit Malcolm discloses increasing or decreasing the processor speed based on the result of the comparison. See column 7, lines 38-42 of Malcolm.

Further, Applicants respectfully submit Malcolm does not teach or suggest any modification to its disclosure that would result in at least features of adjusting the speed of the CPU responsive to the comparison when the measured CPU usage is more than a maximum reference CPU usage of the predetermined reference CPU usage range and combinations thereof as variously recited. For example, Applicants respectfully submit Malcolm describes using a range from a slowest speed to a fastest speed for the processor. See step 602 and column 7, lines 32-35 of Malcolm. In one embodiment of Malcolm, power management is set based on an identified program(s) executing on the data processing system. See column 4, lines 45-62 and column 6, lines 34-35 of Malcolm. For example, applications selected (for power management) that are currently initialized/executing are determined and a processor speed is set to the fastest speed identified for all the selected applications. See Figure 4 and column 6, lines 34-46. In another embodiment, applications selected for power management and each corresponding processor speed can be selected by a user, for example, using a GUI. See Figure 5 and column 6, line 57-column 7, line 20 of Malcolm. Accordingly, Applicants respectfully submit that Malcolm does not teach or suggest at least features of a predetermined reference CPU usage range or wherein if the measured CPU usage is more than a maximum reference CPU usage of the predetermined reference CPU usage range,

then the adjustment of the CPU speed is carried out by initializing the CPU speed for recovering a high performance state and combinations thereof as recited in claim 1.

1b. With respect to claim 1, Applicants respectfully submit that Kawata does not teach or suggest at least features of a method for adjusting speed of a CPU including measuring, comparing, and adjusting the speed of the CPU, wherein if the measured CPU usage is more than a maximum reference CPU usage of the predetermined reference CPU usage range, then the adjustment of the CPU performance state is carried out by initializing the CPU speed for recovering a high performance state and combinations thereof as recited in claim 1.

Applicants respectfully submit that Kawata discloses a permissible range of a CPU busy ratio is 25% to 75%, and a proper CPU power level is a power CPU power level that gives a busy ratio within the permissible range. If a CPU busy ratio becomes greater than an upper-limit of the permissible range (e.g., 75%) that would be decided to correspond to an insufficient CPU power. See Figure 2 and column 7, lines 14-24 of Kawata. In contrast to features recited in claim 1, however, Kawata discloses when the insufficient CPU power is detected, information on clock frequency (or duty factor) for a performance level one-step higher than a current-time performance level is acquired for transition thereto. See step S84 and step S88, Figure 15, column 16, line 66-column 17, line 9 and column 17, line 59-column 18, line 2 (second preferred embodiment).

Applicants respectfully submit that a first preferred embodiment in Kawata does not teach or suggest features recited in claim 1. See column 15, lines 4-20, column 10, line 4 (similar to the operation for lowering the CPU power described in column 7, line 65-column 8, line 14). Similarly, Applicants respectfully submit the third through fifth preferred embodiments in Kawata do not teach or suggest features recited in claim 1. See

column 18, line 4-column 20, line 55. The third preferred embodiment in Kawata considers current value at battery discharge, the fourth preferred embodiment enables user selection of a power saving mode and the fifth preferred embodiment controls brightness of a display unit in linkage with the CPU power control function of the computer system.

Thus, Applicants respectfully submit that Kawata does not teach or suggest any modification to its disclosure that would result in at least features of adjusting and combinations thereof as recited in claim 1.

In summary, Applicants respectfully submit that Malcolm and Kawata teach to increase step-by-step CPU performance when processor speed is less than processor utilization (Malcolm step 608) or insufficient CPU power (Kawata steps S14 and S84, Figs. 12, 15 and 23). In contrast, one embodiment shown in Fig. 3 of the present specification directly jumps to a high performance state when CPU usage is greater than a predetermined CPU usage range. Thus, Applicants respectfully submit that Malcolm and Kawata, individually or in combination, would not result in at least features of adjusting and combinations thereof as recited in claim 1.

2. With respect to claim 7, Applicants respectfully submit that Malcolm and Kawata, individually or in combination, would not result in at least features of wherein the CPU usage is measured by detecting registry information of a computer system and combinations thereof as recited. In contrast, Applicants respectfully submit that column 2, lines 26-33 and column 3, lines 55-56 (e.g., Windows 2000) of Malcolm do not disclose or suggest measuring CPU usage by detecting registry information or combinations thereof as recited.

3. With respect to claim 8, Applicants respectfully submit that Malcolm and Kawata, individually or in combination would not result in at least features of wherein

the CPU usage is measured by calculating an idle thread value of the CPU for a predetermined period of time and combinations thereof as recited. Applicants respectfully submit that column 13, lines 25-47 of Kawata does not disclose or suggest an idle thread value of a CPU and combinations thereof as recited.

4. Applicants respectfully submit that claim 24 defines patentable subject matter for at least features of wherein if the measured CPU usage is greater than a predetermined reference CPU usage, then the adjustment of the CPU speed is carried out by maximizing current CPU speed and combinations thereof as recited.

For at least the reasons set forth above, Applicants respectfully submit that claims 1, 7-8 and 24 define patentable subject matter. Applicants respectfully submit that claims 12 and 15 define patentable subject matter for at least reasons similar to claim 1. Applicants respectfully submit claim 25 defines patentable subject matter for at least reasons similar to claim 8. Claims 2-11, 13-14, 17-22, 26, 28-30 and 32-34 depend from claims 1, 12, 15, 24 and 25, respectively, and therefore also define patentable subject matter for at least that reason as well as their additionally recited features. Claims 23 and 31 are canceled without prejudice or disclaimer. Withdrawal of the rejection of claims 1-15, 17-26 and 28-34 under §103 is respectfully requested.

B. Claims 35-41 are newly added by this Amendment and believed to be in condition for allowance. For example, claims 40 and 25 are patentable for at least reasons similar to claims 7 and 8, respectively.

CONCLUSION

In view of the foregoing amendments and remarks, it is respectfully submitted that the application is in condition for allowance. Favorable consideration and prompt allowance are earnestly solicited.

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If the Examiner believes that any additional changes would place the application in better condition for allowance, the Examiner is invited to contact the undersigned attorney, **Carl R. Wesolowski**, at the telephone number listed below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this, concurrent and future replies, including extension of time fees, to Deposit Account 16-0607 and please credit any excess fees to such deposit account.

Respectfully submitted,
FLESHNER & KIM, LLP



Carl R. Wesolowski
Registration No. 40,372

P.O. Box 221200
Chantilly, Virginia 20153-1200
(703) 766-3701 DYK/CRW;jld
Date:

Please direct all correspondence to Customer Number 34610